KOHLER POVVER SYSTEMS

200-600 V

Diesel



Ratings Range

		KD175U 60 Hz	KD200 50 Hz
Standby:	kW	175	160
	kVA	219	200
Prime:	kW	159	145
	kVA	199	182

Standard Features

- Kohler Co. provides one-source responsibility for the generating system and accessories.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- A one-year limited warranty covers all systems and components.
- John Deere engine with 12-volt battery charging alternator.
- Leroy Somer single-bearing alternator with insulation class H.
- Unit-mounted radiator with 50°C (122°F) ambient air capability.
- Skid and vibration isolators.
- Subbase fuel tank, 340 L (90 gal.).
- Dry type air filter.
- Main line circuit breaker.
- Microprocessor controller.
- Battery, battery rack, and cables.
- Industrial 9 dB(A) reduction exhaust silencer (loose).
- Operation and installation literature.

Generator Set Ratings

				Standby	Rating	Prime R	ating
Alternator	Voltage	Ph	Hz	kW/kVA	Amps	kW/kVA	Amps
	120/208	3	60	175/219	608	159/199	552
	127/220	3	60	175/219	575	159/199	522
	220/380	3	60	175/219	333	159/199	302
	254/440	3	60	175/219	287	159/199	261
	277/480	3	60	175/219	263	159/199	239
	347/600	3	60	175/219	211	159/199	191
LSA462M3	115/200	3	50	160/200	577	145/182	523
	110/220	3	50	160/200	525	145/182	476
	115/230	3	50	160/200	502	145/182	455
	120/240	3	50	160/200	481	145/182	436
	220/380	3	50	160/200	304	145/182	275
	230/400	3	50	160/200	289	145/182	262
	240/415	3	50	160/200	278	145/182	252





With Available Enclosure Accessory

RATINGS: All three-phase units are rated at 0.8 power factor. See TIB-109 for generator set derate tables.

Obtain the technical information bulletin (TIB-101) on ratings guidelines for the complete ratings definitions.

PRP: Prime power is available for an unlimited number of annual operating hours in variable load applications in accordance with ISO-8528/1.

A 10% overload capability is available for a period of 1 hour within a 12-hour period of operating in accordance with ISO-8528/1.

ESP: The emergency standby power rating is applicable for supplying emergency power in variable load applications in accordance with ISO-8528/1. Overload is not allowed. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

Alternator Specifications

- NEMA-MG21, UTE NF C51.111, VDE 0530, BS 4999, CSA standards compliance for temperature rise and motor starting.
- Self-ventilated and dripproof construction.
- Vacuum-impregnated windings with fungus-resistant epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.

Specifications	60 Hz	50 Hz
Ratings voltage	480 V	400 V
Standby rating @ 27°C, kVA	255	203
Prime rating @ 40°C, kVA	228	180
Efficiency @ full load, %	92.1	91.7
Air flow, m ³ /min. (cfm)	30.6 (1081)	25.8 (911)
Direct axis subtransient reactance (X"d), %	10	9.5

Manufacturer	Leroy Somer
Time	
Туре	4-Pole, Rotating-Field
Exciter type	Shunt
Leads: quantity, type	12, Reconnectable
Voltage regulator	Solid State, R230
Insulation:	NEMA MG1
Material	Class H
Bearing: quantity, type	1, Sealed
Coupling	Direct
Voltage regulation, no-load to full-load	±1%

Application Data

Engine

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Engine Specifications	60 Hz	50 Hz
Manufacturer	John Deere	
Engine model	6068HF120-183	
Engine type	4-Cycle, Turbocharged, Aftercooled	
Cylinder arrangement	6 In	lline
Displacement, L (cu. in.)	6.7 ((410)
Bore and stroke, mm (in.)	106 x 127 (4.17 x 5.0)	
Compression ratio	17:1	
Piston speed, m/min. (ft./min.)	457 (1500)	381 (1248)
Rated rpm	1800	1500
Max. power at rated rpm, kWm (BHP)	192 (257)	180 (241)
Valve material:		
Intake	Chromium-Silicon Steel	
Exhaust	Stainless Steel	
Governor type	Mechanical	
Frequency regulation, no-load to full-load	ISO 5%	
Frequency regulation, steady state	±2.5%	
Air cleaner type, all models	Dry	

Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust manifold type	D	ry
Exhaust flow at rated kW, m ³ /min. (cfm)	35.7 (1261)	27.4 (968)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	520 (968)	565 (1049)
Maximum allowable back pressure, kPa (in. Hg)	7.5	(2.2)
Exhaust outlet size at engine hookup, mm (in.)	115 (4.53)

Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Battery charging alternator:	12 Volt	
Ground (negative/positive)	Negative	
Volts (DC)	13	2
Starter motor rated voltage (DC)	12	
Battery, recommended cold cranking amps (CCA):		
Quantity, CCA rating each	One,	760
Battery voltage (DC)	12	

Fuel

Fuel System	60 Hz	50 Hz
Max. fuel flow, Lph (gph)	112 (29.6)	108 (28.5)
Fuel prime pump	Manual	
Recommended fuel	#2 Diesel	
Fuel tank capacity, L (gal.)	340 (89.8)	

Lubrication

Lubricating System	60 Hz	50 Hz
Туре	Full Pressure	
Oil pan capacity, L (qt.)	31.5 (33.2)
Oil pan capacity with filter, L (qt.)	32.0 (34.0)

Cooling

Radiator System	60 Hz	50 Hz
Ambient temperature, °C (°F)	50 (122)	
Radiator system capacity, including engine, L (gal.)	25.8	(6.8)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	87 (4947)	76 (4321)
Water pump type	Centrifugal	
Fan, kWm (HP)	5 (6.7)	3 (4)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H ₂ O)	0.2 (0.8)	

Application Data

Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m³/min. (scfm) *	_	276 (9748)
Combustion air, m ³ /min. (cfm)	16.2 (572)	12.3 (434)

* Air density = $1.20 \text{ kg/m}^3 (0.075 \text{ lbm/ft}^3)$

Fuel Consumption	60 Hz	50 Hz
Diesel, Lph (gph) at % load	Standby Rating	
110% (of the standby rating)	51.9 (13.7)	45.2 (11.9)
Diesel, Lph (gph) at % load	Prime Rating	
100% (of the prime rating)	47.0 (12.4)	40.8 (10.8)
75% (of the prime rating)	39.6 (10.5)	31.3 (8.3)
50% (of the prime rating)	25.4 (6.7)	20.5 (5.4)

Controllers



Decision-Maker™ 1000

Automation

- Test LEDs
- Voltage and speed stabilization

Engine Parameters

- Engine speed indication (with LCD message)
- Battery voltage indication (with LCD message)
- Elapsed hour meter (with LCD message)
- Fuel solenoid control
- Starter control

Measurements

• Frequency, Hz (with LCD message)

Operation and/or Safety Lights

- Oil pressure fault
- Water temperature fault
- Fail to start fault
- Overspeed fault (≥60 kVA)
- Set ready for load
- · Charging alternator fault
- General alarm
- General fault
- Panel lamp
- Emergency stop fault

Safety Devices

- Overspeed fault
- Automatic standby

Miscellaneous

- Fault reset
- Three-phase with or without neutral, two-phase, or single-phase use



Decision-Maker™ 4000

Standard Features

- Large LCD display panel
- Unique control wheel for system access
- User buttons for start, stop, menu, and escape
- Emergency stop button
- On/off key switch
- Panel-mounted battery fuse
- Panel-mounted USB ports for PC access and software upgrades
- Password-protected access to control parameters
- Upgradeable software for future enhancements
- Easy upgrade from Decision-Maker[™] 1000

LCD Panel Features

- 600 x 800 resolution
- Multiple lines of text or graphic display
- · Icons for quick identification of system status
- Five languages: English, French, German, Portuguese, and Spanish

Communication Features

- Engine communication via CANbus
- Modbus communication via RS-485 or ethernet
- PC and flash drive connections via USB

Functions

- View and adjust system operation parameters
- View system faults

Viewable/Selectable Parameters (may require optional module)

- Voltage: phase-to-neutral, total voltage
- Current
- Frequency
- Power (active/reactive/apparent)
- Power factor
- Engine speed
- Oil pressure
- Coolant temperature
- Battery voltage
- Fuel level (%)
- Time delays

Viewable Faults (over 60 individual faults are monitored) including:

- Alternator protection (if equipped)
- Circuit breaker and ground fault protection
- Communication and engine ECM monitoring
- Cooling air monitoring
- Electrical charging system
- Engine cooling system
- Engine lube system
- Fuel system
- Generator set status

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Available Accessories

	Enclosed Unit		Engine and Alternator
	Sound Enclosure M226, 60 Hz, 68.9 dB(A) @ 7 m (23 ft.),		Alternator Strip Heater
	Standby (with enclosed critical silencer)		Air Cleaner, Heavy Duty (with air restriction indicator)
	Sound Enclosure M226, 50 Hz, 69 dB(A) @ 7 m (23 ft.), Standby (with enclosed critical silencer)		Droop Kit with 3-Function Voltage Regulator
	Open Unit		Electronic Isochronous Governor
	Exhaust Silencer, Critical 40 dB(A) Reduction		Lube Oil Drain Pump
	Exhaust Silencer, Residential 29 dB(A) Reduction		PMG Alternator and Voltage Regulator
_	Extension, 40 cm (16 in.)		Tropical Heavy-Duty Alternator Insulation
<u> </u>	Flexible Exhaust Connector		Miscellaneous Accessories
<u> </u>	Protection Mesh		
_	Cooling System		
	Block Heater		
_	[recommended for ambient temperatures below 0°C (32°F)]		
	Radiator Core Guard	ч	·
	Decision-Maker™ 1000 Controller		
	Alarm Horn		mensions and Weights
	Analog Indicator	0	pen Model
	Differential Protection with Time and Sensitivity Adjustment		
	Differential Triggering Fault		
	External ATS Position		н
	External Starting Order		
	Line Voltages, Volts Indicator		
	Overload or Short-Circuit Fault		W L
\Box	Permanent Insulation Controller	0	/erall Size, L x W x H, mm (in.): 2370 x 1114 x 1480 (93 x 44 x 58)
_	Phase Currents, Amps Indicator		eight, wet, kg (lb.): 2070 (4562)
	Plug Preheating		
	Plug Preheating Control		
	Remote Start Capability	١٨/	ith Available Enclosure Accessory
	Single Voltages, Volts Indicator Utility Sensing, 3-Phase	**	Till Available Eliciosule Accessory
	Water Preheating Control		
	•		
_	Decision-Maker™ 4000 Controller		Н
	Alternator Protection		
	Audible Alarm Module		—
_	Five Expandable Modules with Four Inputs/Six Outputs Each		W
	Network Modules (RTC and GSM modems and ethernet router)	Ov	verall Size, L x W x H, mm (in.): 3508 x 1200 x 1830 (138 x 47 x 72)
	NFPA-110 Module Remote Annunciator	We	eight, wet, kg (lb.): 2670 (5885)
	Voltage/Speed Adjustment Module		
	WinTelys Software	NO	
_	Fuel System		TE: This drawing is provided for reference only and should not be used for planning allation. Contact your local distributor for more detailed information.
	Automatic Fuel Tank Fill Kit	DI	STRIBUTED BY:
	Subbase Fuel Tank with Secondary Containment Basin		
_	Subbase Fuel Tank Leak Alarm		
	·		
_	Electrical System		
	Battery Charger, Equalize/Float Type		
\Box	Battery Isolator Switch	1	